Chronic Hepatitis C Infection

From 1998 through 2001, there were 20,552 cases of chronic hepatitis C infection reported in Arizona. Chronic hepatitis C is defined as testing positive for hepatitis C but not meeting the Centers for Disease Control and Prevention (CDC)/Council of State and Territorial Epidemiologists case definition of an acute case of hepatitis C. Of the 20, 552 reported cases, 7,076 (34%) were confirmed by recombinant immunoblot assay or polymerase chain reaction. (Figure 1). Based on the CDC estimates for the nation, there are an estimated 92,000 individuals with hepatitis C infection in Arizona. Thus, excluding unconfirmed cases, Arizona has identified approximately 8% of the estimated cases within the state.

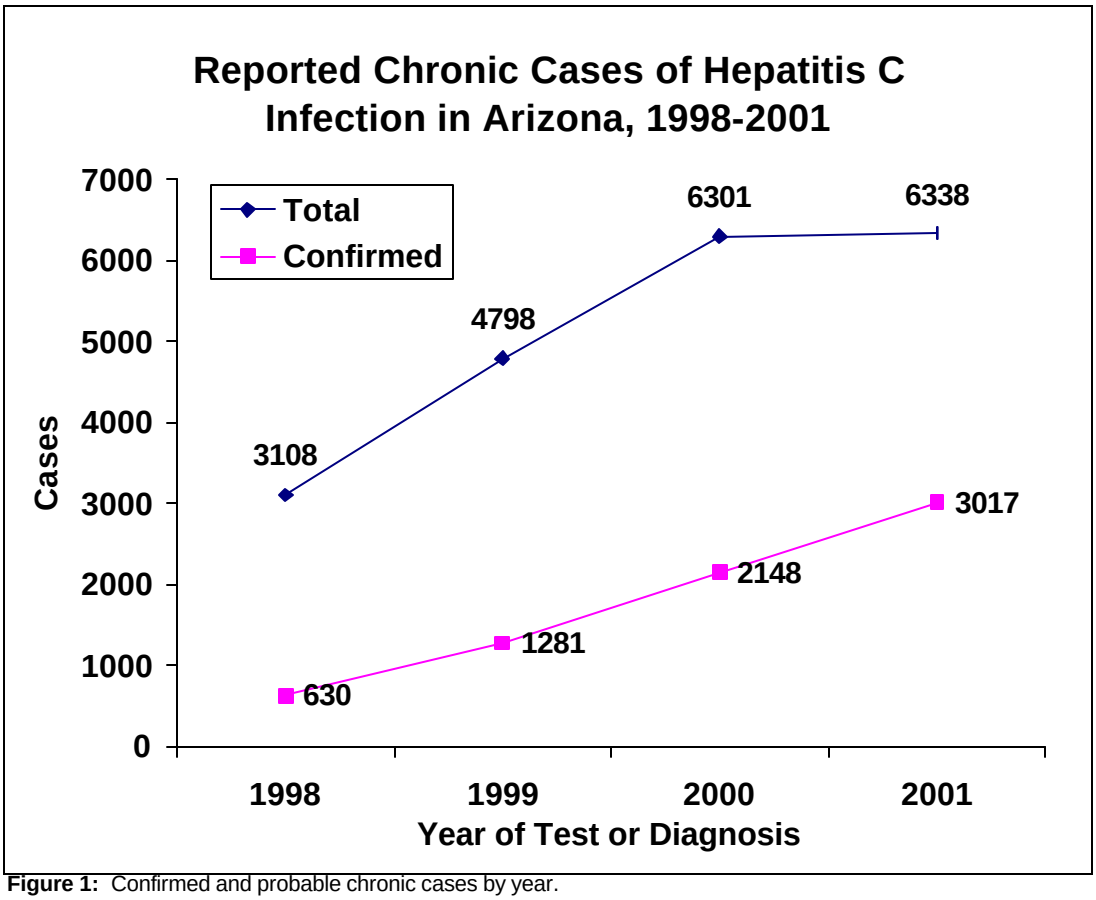


**Figure 1:** Confirmed and probable chronic cases by year.

During 2001, there were 6,338 newly reported chronic cases of hepatitis C virus infection, of which, 3,017 (48%) are confirmed. Geographically, Pinal County had the highest reporting rate of 251 per 100,000 population, or 2.6 times the next highest rate in Yavapai County or 4.2 times the state rate of 58.8 reports per 100,000 population for the year (Figure 2). The high rate in Pinal County can be attributed to a concentration of correctional facilities, which reported 81% of the

cases in that county. Statewide, only 10% of the reported cases were residing in prisons.

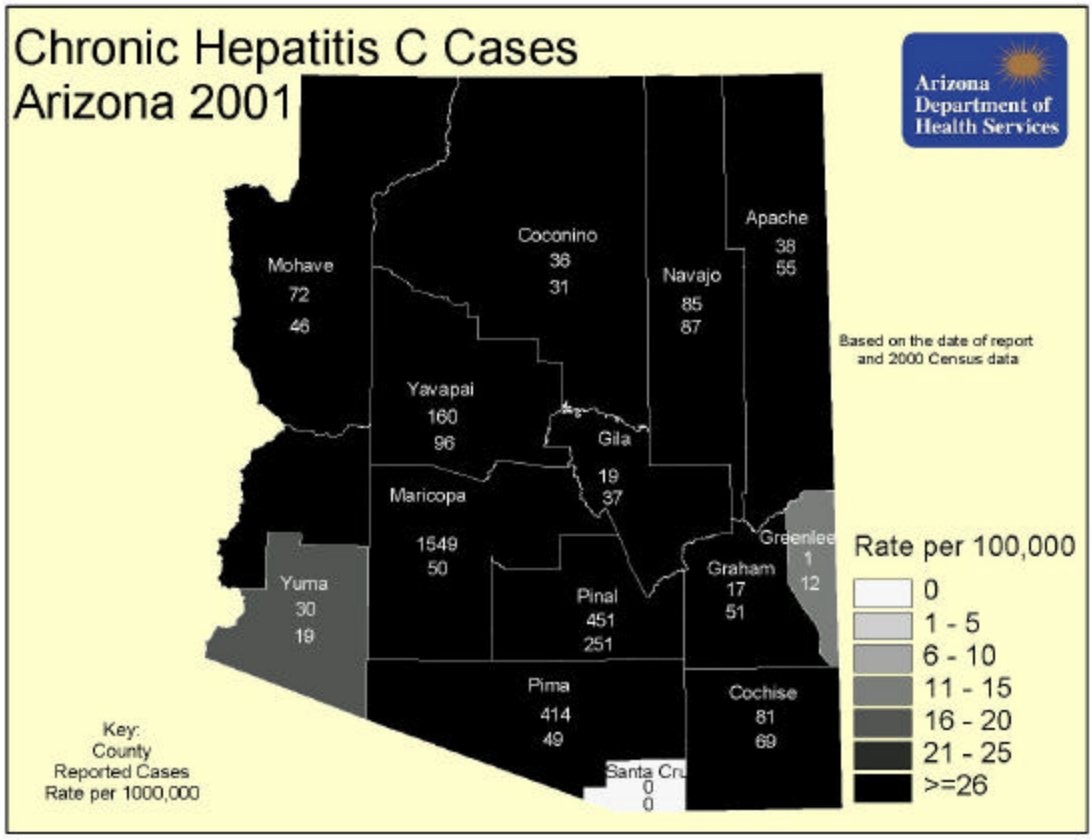


**Figure 2:** Map of Reported Cases and Rates of Chronic Hepatitis C in Arizona, 2001

Males were 2.5 times more likely to be reported than females. By age group, reporting rates among those aged 35 to 54 years are more than twice that of all other age groups (Figure 3). Of the 29% reporting ethnicity, non-Hispanics were 1.4 times more likely to be reported. Of the 27% reporting race, Asians had the lowest reporting rate of 7.6 per 100,000, with Native Americans 1.2 times, Whites 2.3 times, and Blacks 3.9 times that of Asians.

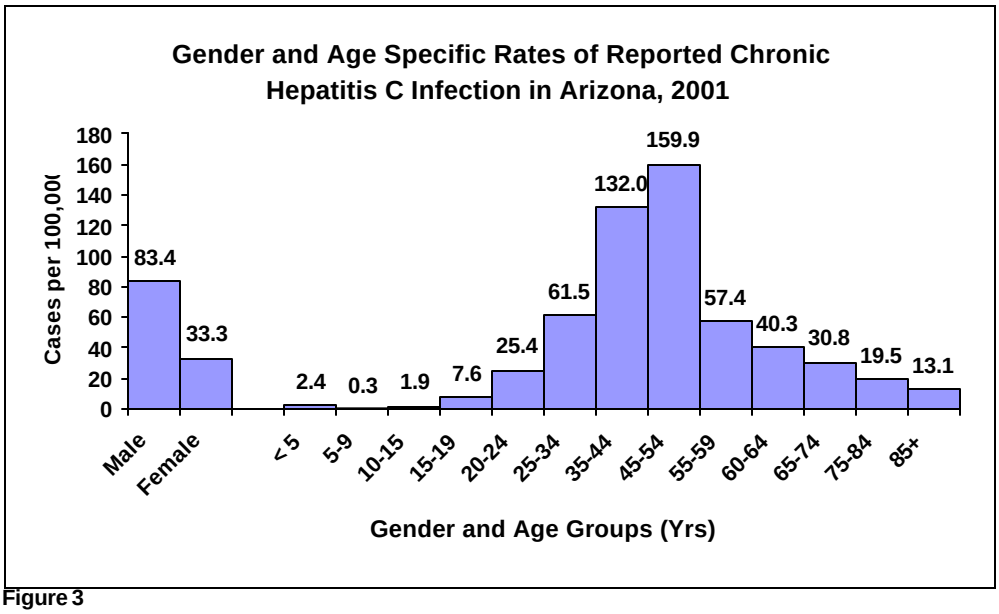


**Figure 3**

HCV Surveillance and Targeted Education Pilot Program, Maricopa County

Communicable disease investigators attempted to contact 925 patients who were confirmed cases of chronic hepatitis C or who had a positive screening test for hepatitis C and had received a blood transfusion prior to 1992, or had a past/current history of injection drug use. Questionnaires designed to assess risk factors, demographics, and the need for medical and social services were successfully administered to 50% of the 925 patients. The investigators could not locate 23% of the patients and12% declined an interview. Twenty-one patients (2%) were deceased and the remaining 13% were unable to respond due to their medical condition or a language barrier.

Of those interviewed, 43% were unemployed (Table 1), which is 8 times the unemployment rate in the Phoenix/Mesa metropolitan area[1]. Only 22% were uninsured, which is lower than the general population (Table 2). This may reflect the selection of confirmed cases, who all required additional tests or procedures to be confirmed.

| Employment Status | Cases | Percentages |
|---|---|---|
| Full-time | 230 | 50% |
| Unemployed | 201 | 43% |
| Retired | 32 | 7% |

**Table 1:** Employment status of cases. Number and percentages of cases engaged in full-time employment, retired, or unemployed.

[1] Bureau of Labor and Statistics http://data.bls.gov/cgi-bin/surveymost?la+04

| Insured Status | Cases | Percentages |
|---|---|---|
| Private Insurance | 205 | 44% |
| Medicare/State Funded | 133 | 29% |
| Veterans Administration | 13 | 3% |
| Other Insurance | 11 | 2% |
| Uninsured | 102 | 22% |

**Table 2:** The type of insurance, or lack of insurance, carried by cases.

Some form of hepatitis C treatment was received by 23% of the confirmed cases. Surprisingly, only 22 and 25 percent of confirmed cases had received at least one dose of hepatitis A or hepatitis B vaccine, respectively (Table 3).

| Vaccinated | Cases | Percentages |
|---|---|---|
| Hepatitis A Vaccine | 101 | 21.8% |
| Hepatitis B Vaccine | 118 | 25.4% |
| None/Unknown | 346 | 74.6% |

**Table 3:** Number and percentages of cases receiving a vaccine. Categories are exclusive.

Figure 4 shows the percentage distribution of risk associated with hepatitis C. The most common risk factor was IV drug use (45%), followed by blood transfusion received prior to 1992 (29%). More than 19% of those questioned denied any of the listed risk factors.

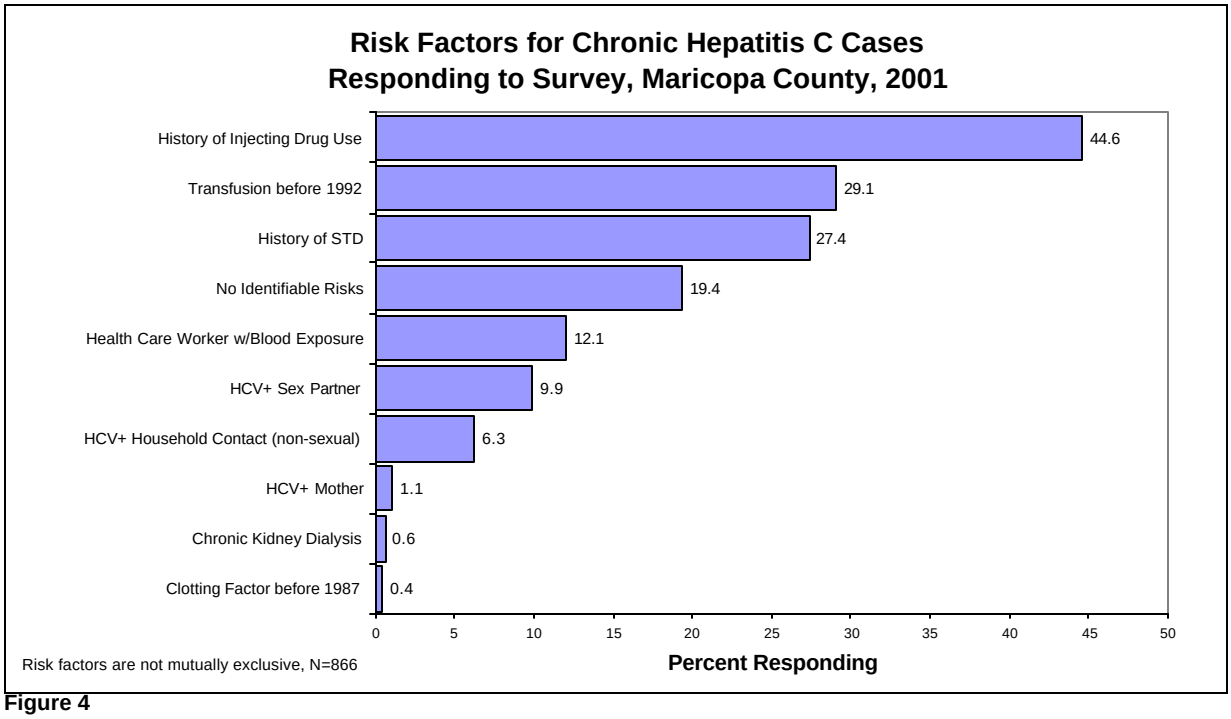


**Figure 4**

Because there is no vaccine or curative treatment for this disease, prevention and control are most effectively based upon two methods: (1) testing and risk

reduction counseling for individuals at high risk, and (2) early identification and counseling of infected individuals regarding transmission prevention and mitigation of further liver disease.

Providers should consider testing any patient who:

- has a history of intravenous drug use, even only once;
- received blood or blood products or had a solid organ transplant prior to 1992;
- received clotting factor prior to 1987; or
- has been on chronic kidney dialysis.

To prevent further liver disease, those with hepatitis C infection should:

- abstain from alcohol;
- if susceptible receive immunization against hepatitis A and hepatitis B;
- consult with their physician prior to taking any over-the-counter medications or herbal medications; and
- avoid raw shellfish, since *Vibrio* spp. can cause life threatening infections in patients with hepatitis C.

If treatment is an option but cost is an obstacle, physicians may contact Schering-Plough's Commitment to Care program at 1-866-444-3004.